

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) Device for dislodging and recovering dredging material of varying nature, comprising:

a bearing housing,

a drive shaft mounted therein for rotatingly driving with a determined torque a cutter head with a support ring, which cutter head is mountable on the drive shaft via a hub, ~~and~~

a suction pipe which can be connected to a suction mouth which is surrounded by a fixed cutter shield which fills the space between the rotating support ring on the one side and the suction mouth and the bearing housing on the other, ~~and~~

a number of cutter heads with a different support ring diameter,

a first cutter head of said number of cutter heads having a first support ring diameter configured for a relatively hard bed material, ~~such as including~~ rock, ~~and~~

a second cutter head of said number of cutter heads having a second support ring diameter configured for a relatively soft bed material, ~~such as including~~ sand, said number of cutter heads being alternatively mountable via the same hub on the drive shaft,

a number of suction mouths with a different entry section which are alternatively connectable to the suction pipe,

a first section mouth of said number of suction mouths being configured for a relatively hard bed material, including rock, and being sized to cooperate with said first cutter head, and

a second suction mouth of said number of suction mouths being configured for a relatively soft bed material, including sand, and being sized to cooperate with said second cutter head, the first suction mouth having a first entry section, and the second mouth having a second entry section, said first entry section being smaller than said second entry section,

wherein the first support ring diameter is smaller than the second support ring diameter, the first support ring diameter being determined for a relatively hard bed material and the second support ring diameter being determined for a relatively soft bed material~~wherein the support ring diameter is determined by the torque and the nature of the dredging material to be recovered.~~

2. (Cancelled)

3. (Currently Amended) Device as claimed in claim 21, wherein the dimensions of the first and second suction mouths are configured such that in the operative position the bottom end fits closely between the cutter shield and the support ring of the first and second cutter heads, respectively.

4. (Currently Amended) Device as claimed in claim 21, wherein the device further comprises a cutter ladder having a front end, and a number of cutter shields being alternatively ~~mountable~~ fixable to the front end of ~~on~~ the cutter ladder which, during use of different cutter head/suction mouth combinations, allow a first and second cutter shield of said number of cutter shields to be ~~connected~~ butting up/extending on one side to the edge of the bearing housing and the first and second

suction mouth and on the other side to the inner edge of the first and second support ring and the front end of the cutter ladder, respectively.

5. (Currently Amended) Device as claimed in claim 4, wherein the bearing housing has a cylindrical outer surface and a bottom end, wherein the first and second cutter shield each have a cylindrical inner surface fitting around the cylindrical outer surface of the bearing housing, and a bottom outer surface in ~~takes the form at the bottom of a truncated cone~~ narrowing in the direction of the bottom end of the bearing housing ~~in the direction of the cutter head,~~

wherein the angle of opening of the truncated cone of the first cutter shield is greater than the angle of opening of the truncated cone of the second cutter shield,

the bottom outer surface of the first cutter shield, in the mounted position thereof, extending between the bottom end of the bearing housing and the front end of the cutter ladder,

the bottom outer surface of the second cutter shield, in the mounted position thereof, extending between the bottom end of the bearing housing and the second support ring.

6. (Previously Presented) Device as claimed in claim 1, wherein at least one nozzle is provided for spraying a fluid under high pressure into the dredging material cut into by the cutter head.

7. (Previously Presented) Device as claimed in claim 6, wherein the drive shaft takes a hollow form in order to form a channel for the fluid under pressure,

wherein the at least one nozzle is mounted on the outer end of the drive shaft connected to the cutter head.

8. (Previously Presented) Cutter suction dredger for dislodging and recovering dredging material, comprising a device as claimed in claim 1.

9. (Previously Presented) Method for dislodging and recovering dredging material using a device as claimed in claim 1, comprising the steps of:

selecting a cutter head from the number of cutter heads as a function of the dredging material to be recovered and the torque, wherein a cutter head with a smaller diameter is selected for a harder material, and

connecting the selected cutter head to the drive shaft.

10. (Currently Amended) Method as claimed in claim 9 ~~using a device as claimed in claim 2~~, further comprising:

selecting a suction mouth from the number of suction mouths as a function of the dredging material to be recovered, wherein a smaller entry section is selected for a harder dredging material, and

connecting the selected suction mouth to the suction pipe.

11. (Currently Amended) Device as claimed in claim 3~~1~~, wherein the device further comprises a cutter ladder having a front end, and a number of cutter shields being alternatively ~~mountable~~ fixable to the front end of ~~on~~ the cutter ladder which, during use of different cutter head/suction mouth combinations, allow a first and a second cutter shield of said number of cutter shields to be ~~connected~~ butting

up/extending on one side to the edge of the bearing housing and the first and second suction mouth and on the other side to the inner edge of the first and second support ring and the front end of the cutter ladder, respectively.

12-13. (Cancelled)

14. (Currently Amended) Device as claimed in claim ~~11~~14, wherein the bearing housing has a cylindrical outer surface and a bottom end, wherein the first and second cutter shield each have a cylindrical inner surface fitting around the cylindrical outer surface of the bearing housing, and a bottom outer surface in ~~takes the form at the bottom of a truncated cone~~ narrowing in the direction of the bottom end of the bearing housing~~in the direction of the cutter head,~~

wherein the angle of opening of the truncated cone of the first cutter shield is greater than the angle of opening of the truncated cone of the second cutter shield,
the bottom outer surface of the first cutter shield, in the mounted position thereof, extending between the bottom end of the bearing housing and the front end of the cutter ladder,

the bottom outer surface of the second cutter shield, in the mounted position thereof, extending between the bottom end of the bearing housing and the second support ring.

15. (Cancelled)

16. (Previously Presented) Device as claimed in claim 3, wherein at least one nozzle is provided for spraying a fluid under high pressure into the dredging material cut into by the cutter head.

17. (Previously Presented) Device as claimed in claim 4, wherein at least one nozzle is provided for spraying a fluid under high pressure into the dredging material cut into by the cutter head.

18. (Previously Presented) Device as claimed in claim 5, wherein at least one nozzle is provided for spraying a fluid under high pressure into the dredging material cut into by the cutter head.

19-20. (Cancelled)

21. (New) Device as claimed in claim 1, wherein the device further comprises:

a cutter ladder having a front end with a bottom surface, the first support ring of the first cutter head having an upper surface;

wherein the first cutter head is dimensioned in such a way that in the mounted position thereof, the upper surface of the first support ring faces the bottom surface of the front end;

wherein the second cutter head is dimensioned such that in the mounted position thereof, the second support ring surrounds the front end of the cutter ladder.

22. (New) Device as claimed in claim 21, the first and second support ring of the first and second cutter head each having a cylindrical inner surface, wherein the first suction mouth is adapted to closely fit between the cylindrical inner surface of the first support ring and the cylindrical outer surface of the bearing housing; and

wherein the second suction mouth is adapted to closely fit between the cylindrical inner surface of the second support ring and the cylindrical outer surface of the bearing housing.

23. (New) Device as claimed in claim 5, wherein the device further comprises: a cutter ladder having a front end with a bottom surface, the first support ring of the first cutter head having an upper surface;

wherein the first cutter head is dimensioned in such a way that in the mounted position thereof, the upper surface of the first support ring faces the bottom surface of the front end;

wherein the second cutter head is dimensioned such that in the mounted position thereof, the second support ring surrounds the front end of the cutter ladder.

24. (New) Device as claimed in claim 23, the first and second support ring of the first and second cutter head each having a cylindrical inner surface, wherein the first suction mouth is adapted to closely fit between the cylindrical inner surface of the first support ring and the cylindrical outer surface of the bearing housing; and

wherein the second suction mouth is adapted to closely fit between the cylindrical inner surface of the second support ring and the cylindrical outer surface of the bearing housing.